

ABSTRACT

Active power factor correction (PFC) circuits are used to minimize unwanted harmonic distortion in applications where AC electrical power is rectified to produce DC power needed for operating electrical equipment. A variable amplitude regulator (VAR) is a PFC control interface which is simpler to implement than conventional circuits, and offers a wider dynamic operating range. The VAR functions as a resistor scaling network using a two-stage RC filter to maintain the DC output voltage constant for various load conditions and to maintain the rectified current in phase with the sinusoidal circuit flow in an AC power line, through both slow and rapid changes in the load coupled to the direct current output. This control interface offers excellent performance characteristics and requires only a few components for a useful implementation.